Wind Chill

From the user, we are given an air temperature (T) and a wind speed $(Wind_{sfc})$.

In order to calculate the Wind Chill, the temperature must be converted to degrees Fahrenheit (°F).

To find out how to convert the temperature, see the link below:

Temperature Conversion

Also, in order to calculate the Wind Chill, the wind speed must be converted to miles per hour (mph).

To find out how to convert the wind speed, see the link below:

Wind Speed Conversion

Then, the Wind Chill can be calculated using this formula:

$$WindChill = 35.74 + (0.6215 \times T) - (35.75 \times Wind_{sfc}^{0.16}) + (0.4275 \times T \times Wind_{sfc}^{0.16})$$

Because the user might need the Wind Chill in Watts per meter squared $\left(\frac{W}{m^2}\right)$, it can be calculated using an air temperature in degrees Celsius (°C) and a wind speed in meters per second (m/S):

$$WindChill = \left(12.1452 + 11.6222 \times \sqrt{Wind_{sfc}} - 1.16222 \times Wind_{sfc}\right) \times (33 - T)$$